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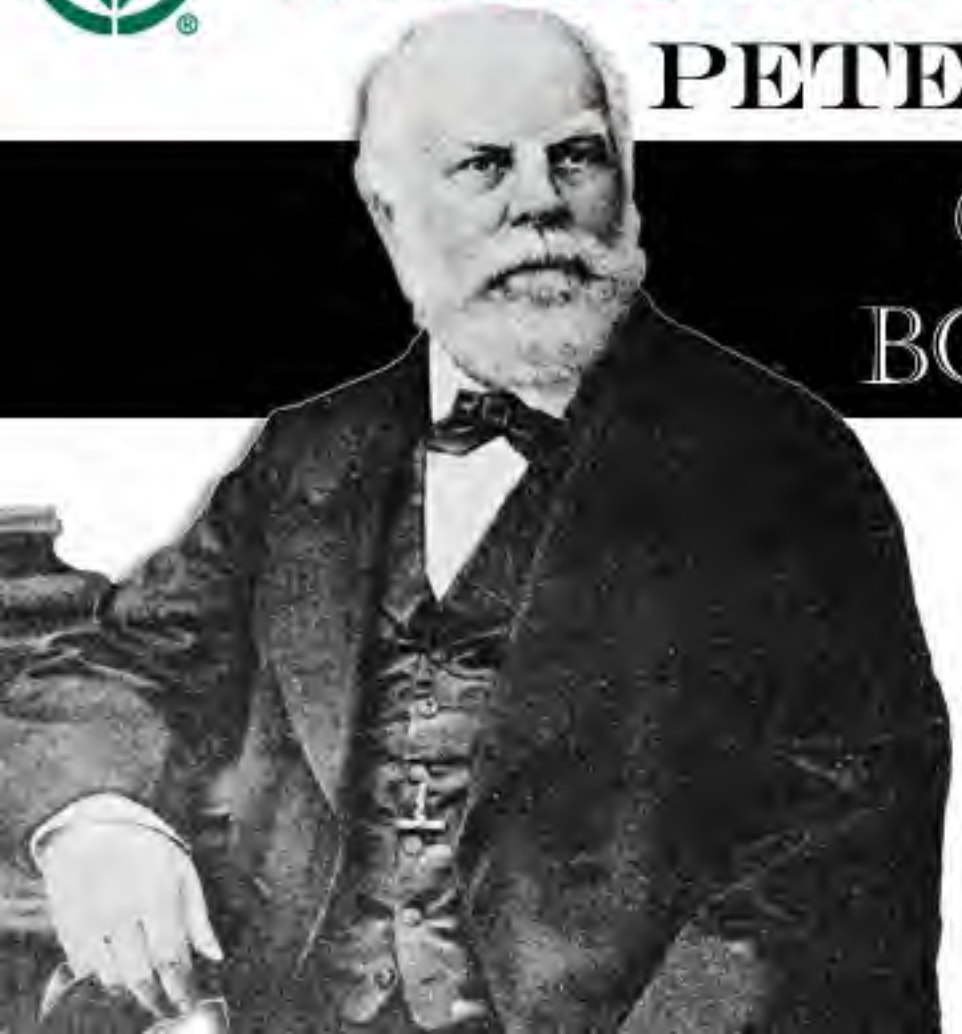
George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

121033

P. Aristata Eng.

~~P. Balfouriana~~

Pines aristata Eng.

" exclusively alpine, never found lower than 9000 or 10000 feet" ? Parry 1861 On Pikes Peak it grows between 9200 1243

In its lower elevation mixed with P. flexilis higher up the only growth of

July 2d 1862 On Pikes Peak it self it forms the highest timber, and comparatively rare, readily mistaken for stunted P. flexilis because of its sterile; P. flexilis quite abundant on the slopes of the Peak.

P. aristata between 9200 9,500 and 12000 feet, if Peak is 14,200

Roezl (Catal. 1857) has a group of the Pikes — a single species? — violet-noir, black-purple — on the highest points of the Rocky mountains (2.4 or 5 leaves)

Cones 13/21

Pines from the defiles of the Wind River Mts Fremont 1st Exped. p. 97.

leaves 1½ - 2 inches long P. flexilis probably

Pinus Cochetopee Pass - Gunn's Bot. 1st p. 130. Cones very resinous 1½ inch long Par R. R. II. 2. p. 130

Leaves 1-(1¼) inch long in the most robust specimens 1½ in diameter on ~~9,000 ft.~~ less than 1 inch

Square stick 62 layers of wood in 18 lines — or a tree 62 years old would be 3 inches thick — a tree of 2 feet would be 496, 1 ring 18/62 lines =

Male spikes red. Aug 12th 1861 (passé)

(2.4 or 5 leaves)

Half grown cones July 1861.

(Sub)mascutine spikes much rarer than feminine ones

(Same in P. flexilis)

" Hickory-Pine, "the toughest kind of Pine" (Tompkins). used there for making chairs

each ring average (16 - 2×¾ = 14½" = 174")

Cones 16 inch diameter, 420 rings 174/420 = 0.20 Gia. ½ inch thick ¾ inch thick Dia

One of the largest tree at base of mount Flora
9 feet 2½ inches circumference 1 foot above ground 30-40 feet high

9.2½ = 110½ inches 314 / 11050 / 35 inches diameter
942
1630
1570 probably (¼ lin. wiss)

Germinates with 7 Cotyledons (Parry)

about the end of June ~~the beginning of July~~ & Southern leaves half grown

Pl. 5. Branches gathered in June, the upper one with ~~young~~ cones, nearly a year old, the young shoot of the present year just pushing out; ~~scales~~ showing the scales mostly broken and — their axils the ~~bases of young~~ leaves.

The lower branch ~~shows~~ with more slender leaves bears male flowers,

Pl 6 fig. 1-2 Ripe Cones, a smaller one, closed and a larger one with open scales; a. b. & c. show single scales from the side and inside and the seed; the latter were ~~obtuse~~ incomplete, the only ones obtained when the drawings were made (Pl. 11 & 7. ~~Show~~ those on) are better; a external & internal ~~view~~ ~~surface~~ side, or side turned towards ~~the~~ scale; fig 8 Embryo with 7 Cotyledons, magn. 10 times. fig. 3 and 4 fascicles of leaves, ~~magn.~~ twice magn. 3 young ones with their bracts; vagina adpressed; 4. full grown the scales of the fruiting region removed. of the female bract magn. 10.

fig. 5-6 ~~and 3~~ upper part of leaf, fig. 12 vein of 6-8 sections, of leaves soaked in water and dry magn. 10. Sect. about the middle only (6 sect of fig 5.) ~~8~~ 8. sect of the leaf of the male bract 7. of another leaf.

9. bunch of male aments with the ~~exterior~~ involucral bract, the proper ~~fruits~~ ovary of each ament visible between the ~~the~~ bracts fig 2 a. an anther fig above magn 10. vestiges of a style visible at the end of the commissure.

b. Pollen. mag 100.

~~Pl~~

12103A

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Pinus aristata
var decurva

Pine from the East face of the White Mts. Cal.
Grows only at a height of from between 10.000 & 11.000
feet in moist ground in groves, associated with
monophylla. Tree rather ragged in habit, 20 to
35 or 40 feet high at most, resembles in general
appearance the most flourishing specimens of its
associate, but with the branches longer, more slender
& occasionally drooping. Leaves stand out at
a wide angle from the twigs. In July there was
snow 500 feet lower down the mountain than the lowest
individuals of the species, & patches of snow were
scattered in all the sheltered spots in the
grove. Trunk of the tree about a foot in diameter,
rather straight, as compared with monophylla,
probably from its growing in dense groves. Bark
thin, rather a dark reddish brown. Soil a rich
loam such as is often found in snow basins; subsoil
granite debris. The White Mt. range lies directly
East of Owen's valley, the Northern extremity lying S. E
of Mono Lake about 50 M. from the lake

1867

Collected near Lake Mono, Cal.
Coll. S. Mac. Bolander

12104

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Oct 27 1863

After examining the subpinus I am struck with the similarity of Pinus aristata with them, though otherwise so distinct by fea. ament, fruit and seed. Is it a character of the Rocky Mountain locality ?

in both the leaves are entire.

Cones pale, resinous, brittle, more or less entire vaginal leaves obsolete reamed in the 2d year male aments oval, short, with few (4 to 6) thoroughly anthers without the crista; with a mere knob scarcely one of that of Larix or Abies

The entire leaves & knobbed anthers are very rare among Pinus species; of the entire leaves I find only again in another Rocky Mountain species, P. flexilis,

knobbed anthers only in the 5 species here mentioned Aristata & the 4 subpines

Enno Sander,

Ecke der Zweiten und Walnut Straße,

unter Barnum's Hotel,

Saint Louis, Mo.

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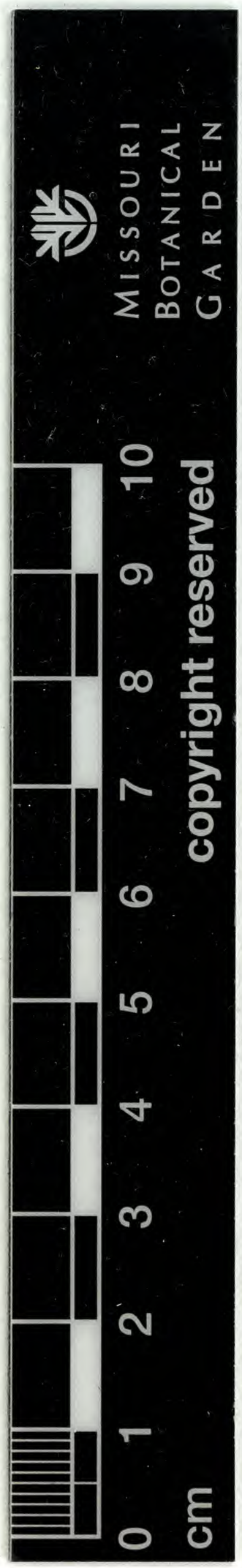
5017



5 leaved

Pinus "B" 8th Sept 1861.

Excelsa ~~assitata~~

Excelsa alpine reaching the highest altitude on the Rocky Mts. When exposed to the wind, and beat down by snow almost prostrate. very much contorted wood apparently durable. going branches thickly covered with pitch. bears cones abundantly when 50 6 ft high in favorable situations grows 30 to 40 ft 18 inch diameter. bark reddish brown. furrowed. Cones marked "B"

I thus P Florales Iamus.?
more full notes by mail. and a
rough pencil sketch of a Specimen here

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12106

June 18 1862 Tarryall, near 10,000'

About P aristata. I find it in this vicinity to be quite a common tree growing about mining gulches and even in towns. I do not know whether my notes heretofore have given you a good idea of its general aspect. The striking peculiarity of its leafy branches disposed in prolonged bushy cylinders I can only compare it to the brushes used to clean lamp chimneys. I think with a good supply of these of different lengths I could manufacture a pretty good specimen of ordinary growth. Another peculiarity noticed is the tendency to send off small shoots all along its trunk even close to the ground the oldest trunks thus seeming to maintain their vitality to withstand the alpine cold to which they are subject. Its lowest range is (8000? ft extending probably to near 10 000 ft?) I shall try & secure specimens

12107

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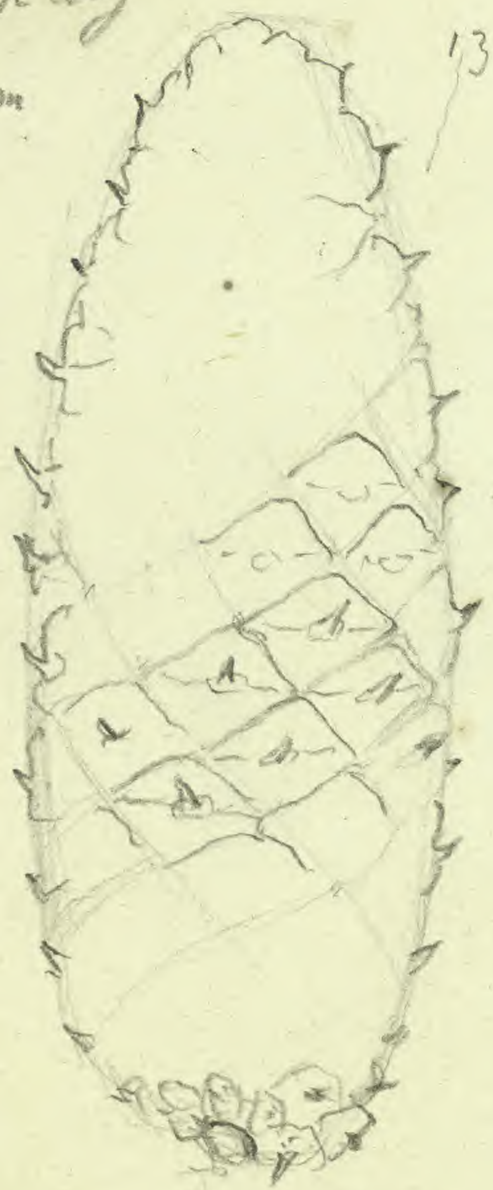
1878/79

1 probably ar State Nevada

3/4 inch long
1/4 diam



prickles sharp, slender
1/2 - 2 lines long

Sargent, California?
T. Balfourian?

13/21
order

sessile, oblique
at base, otherwise symmetrical

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JONES & LEITCH,
BOOKBINDERS,
Corner Fifth and Market Streets, St. Louis, Mo.

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Pinus ari's tata (. S Sargent Nov 3' 78)

once common on Prospect Mountain, Eureka, Central Nevada. Cut now nearly destroyed (for props in the mines) Called Foxtail Pine, or sometimes Spruce. — Grows 7500 - 8000 feet alt North West Slope to Top. — 15 - 30 feet high. Largest 2 feet diam (3 feet from ground)

Bark reddish, smooth in young tree, deeply furrowed and scaly in old tree; bark of branches white smooth, marked with the black scars of the fallen leaves.

Cones in pairs or commonly single. Seeds last all dropped by Sept 21

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County and State.] .....

12109

.....

[Give any information thought desirable, as to profession, etc., of the person recommended.] .....

.....

[To be signed by two members or fellows of the Association.] .....

.....

Laid before the Standing Committee at its meeting

on .....

Action of the Committee, ...

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.....

General Secretary.

If the person recommended is to be present at the meeting, write the word *present* in space under this.

Rec'd May 6th
Ans May 15th

20 extra for Carey

Davenport May 4th 1863

My Dear Dr

Yours 19th 27th ult. rec'd. That Chart shall be made but will require a consultation of notes. & selection of plants that will take some time. — The idea is excellent I would suggest farther the use of different colors to designate trees, shrubs, and herbaceous plants &c.

You persist in using the ?!? It ought to go on your Coat of arms — the hook at the top is very appropriate as much as to say — Come on. —

I think male & female trees both of P. flexilis & P. aristata are separate: also that the males are much the rarest. My male specimen of P. flexilis was from slope of Pikes peak consequently collected July 1st.

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12110

My last years note specimens of
P. virgata. were got on my last
trip to the alpine district consequently
Aug 12th I missed it altogether
last years — (half grown ones 1861 July)
unopened cones of Pinus ponderosa
might be called "blackish purple"
The unripe cones of P flexilis
light green —
Cones in both species I think
persist till the growth of the
branch the following season loses
the attachment —

I think there is little doubt
about the square sawed stick
belonging to Pinus ponderosa. I got it
from a pile at a saw mill near
Tarryall. where the tree is not
uncommon. I questioned the proprietor
closely. who said it belonged to the
"toughest kind of pine". sometimes
called "hickory pine" he had it
sawed up for making chairs.

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He
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He pointed to a pile of logs
near of the same undoubtedly
Ponderosa. I took measurements
of one of these viz
Log. Ponderosa Diameter 16 inch No rings 420
Thickness of bark 3/4 inch
I also have a note of measurement
of one of the largest trees seen at
base of Mt Flora Circumference
one foot above ground 9 ft 2½ inches!!
height 30 to 40 ft!

You must have specimens of bark
of P flexilis. the small tree of
which I gave you a section. It
is very similar to white Pine (P Strobus)
The correct measurement of
A Menziesii. Circumference 2 ft above ground 5 ft 7 in
No rings 127. — height 82 ft thickness
of bark ½ inch — Common name "Spruce"
Common name of A Douglasii "Hemlock"
" " A Engelmanni "White Spruce"
I have had in contemplation for
several years. a table to show

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The systematic growth of forest trees.

I commenced it over 10 years ago at my fathers' N.Y. when there was a forest being cleared near by, and have been accumulating data ever since. I must draw it out in full when I get home, & have your criticism.

What about the copies of your matter in St Louis transactions I shall want to get 25 to 50 includ the plates — should like some soon.

I am still in the humor of going out again. Jack Case seems quite sore over his removal & does not take regular observations he got the detached thermometer. I sent him "all safe" will not feel like paying more for the barometer — If Shaw will buy that off Conners Silliman. I shall then be able to settle with you, and take back the barometer from Case. My artist is going to lay her hand on Primula Parryi. I have dreaded to write over sea

Yours C C Parry

Dr Parry — Nov. 1864

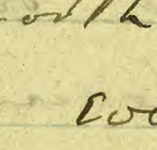
Branch of P. Aristata Eng

Cones projecting at a right angle

Ordinary form of P. Aristata Eng in alpine slopes.

Diameter 18 inch height 30 ft

Prostate form of P. Aristata on the summit of alpine ridges exposed to winds. a portrate and almost creeping

The bark is moderately rough of a reddish brown color, on the young branches smooth with large vesicles containing a clear balsam! wood white, tough, not very resinous, apparently durable. old dead trunks worn smooth and seasoned show little tendency to decay even the slender branches persistent and tough as Juniper. Cones mostly abundant particularly on young bushy specimens. when young of a brownish purple changing to a reddish brown. on middle sized trees. the young shoots have the short leaves very uniformly arranged along the stem. projecting at right angle giving a peculiar and rather stiff aspect to the foliage  seed very easily detached and owing to their small size and large wing. are widely scattered.

(over)

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12111

In examining the stick I brought with me, being a young sapling. 1 inch diameter at base and tapering gradually to 1/2 inch in 3 1/2 ft I found to my surprise on counting the annual rings carefully with a lens that it was fully 50 years old!! The outer rings were pretty regularly diminishing in width from the center outward. So that taking this as a fair average of the growth of this species. Some of the individuals I saw having a diameter of 2 ft and over at base would be over (1000 years Old!!!) The specimen from which this calculation is made, grew in a sheltered place, and not exposed to be stunted in growth. The wood (now seasoned) is very tough not showing any plain mark of distinction between sap & heart wood. The whole surface of the bark showing regularly arranged leaf scars is occupied with projecting blisters 1/4 diameter (some of them now wrinkled etc) containing a clear balsam. On just opening one of these vesicles the clear fluid exudes as if the stock had been just cut.

Trees never more than 40–50 feet high; bears cones when quite small

—copiously covered by resin exudation

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6

Pinus Balfouriana Murray Ed.
Org. Com 1857
Jeffrey ap Gordon Pin
2d ed (1875) 293

First published in Oregon Com Rep.
1853 but really from the first return
Gordon Pinetum 1858 as P. Balf Jeffrey
p. 217

1217-38

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12112

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March 7 76

Pinus Balfouriana

1. genuina, ovato-cylindrica purpurea 3 foliis subnudis

2. mucronata, ovata, purpurea, brevifolia et erecta mucronata

3. retrorsa, ovata, fusca, longifolia retrorsa aristata.

Nevada Gabbs Utah Silver probably Rim of the Utah Basin

4 aristata ovata purpurea. longe erecta-aristata.

Colorado to San Francisco Mt.

no difference but in shape and proportion of Cone (wrong figure? like first ponderosa?) and length & strength and direction of leaves.

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St Louis Febry 18th 1876

Herr Doctor

Ihre gütige Balance
zu meinem Conto ist Ihre Zahlung
von ℳ 50— Febry. 7th in gutem Gold
erhalten 40 45/ 9 55 — ℳ 50 —

Ergebenst
E. Langen

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12113

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March 25 1879

Inyo Mountains and their northern Continuation the White Mountains are on the Eastside of Owens River and Owens Lake — East of the watershed of the Sierra Nevada

Thus all the species of Pinus aristata come from this eastern side — none in the California Mountains proper where P. Balfouriana is found

P. aristata scale flat, even at base, little thickened lower half of epiphysis not larger or not as large as upper. Seed compressed wing broad

P. Balfouriana scale — epiphysis much thickened, base knobby. lower half of epiphysis usually larger than upper one; seed longer, more terete

12114

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Rec June 25th 1878 Cambridge June 24th
Ans same day

Dear E.

Well, it odd we did not
pow Known the Cutes of Sapitlan a varieties!
The Schmatic name Cutes was last year, just
starting to grow then ever. My only
left Sargittania tuber - from which the termi=
nal shoot was destroyed, is starting a side
bud.

Now I am going to give my advice
about the Pine-nomenclature.

We want (when we can) to settle the
names once for all. And if you
don't go back to the oldest name (under
Abies) but show there is an older, some
one else will. Still judgement &
discretion must be used.

I will take up the oldest California name
first, and see what it applies to. Sarla=
tore ought to have settled it, & might.

I have the Mexican Duhamel
But this vol. 5 is published (as per title page)
in 1825. Still that makes the oldest
name for any Pacific coast Pine.

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Loiseleur-Deslongchamps — the distinguished has a long monograph of Pines. pp. 227 to 284. & then this. Later he runs on to p. 321 for there is enough of it to be important; that the character is not high.

I copy —

Pinus Californiana (not Californica)

Pinus Californiana. P. foliis geminis tenuissimis pracilibus; strobilis folio multo longioribus.

— I will translate the French —

I have believed that I ought not to neglect to make known this species, although the only individual which I have seen, at the Jardin des Plantes, has neither flowers nor fruits. The note which has been communicated to me by M. le Prof. Thouin, leaves no doubt of the existence of this Pine as a distinct species. "This tree grows in the neighborhood of Monterey en California. One of its cones, collected by Coligny, gardener to the expedition of La Peyrouse was sent to the Museum of Natural History in 1787. This Cone had the form of that of the grand Pin maritime. But it was more than a

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third layer in all its dimensions. Under each of its scales were found two seeds of the pine of Haut of Pinus Cembra (Pin Cembro), and of which the kernel was good to eat. These grains, borne at the museum, produced a few young plants, which, cultivated in the orangery, were kept for a long time, until they were given to the cultivators in the northern departments. There is still one at the Garden of Plants. Placed dans le lieu nommé la petite butte: dans cette très vigoureux, il se maintient en santé." — Then proceeds Linnaeus. I will add that this tree is about 7 feet high; that its leaves are 3 inches (pouces) in length, très menues, d'un vert peu foncé, and that they they are in two or three in the sheath.

This is all. —

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Nuttall was head gardener at Jardin des Plantes.
Ste. or the Museum, must have had the case when
this note was written. By the comparison
with P. maritima we may conclude it was
not with out pointed petiole. & from its size too
it cannot be Coulteri or Johnsoni. It is
not compared with case of P. pinea. the seeds
are said to be like those of P. Cembra. —
P. insignis could not be missed at Monterey,
P. tuberculata may have been picked up.
no other right there, at all.
Somebody will want to apply the name of
P. radiata or P. tuberculata to the insignis. It
is to that you may doubt if they are much
older. Rev. thanks Dr's paper was read
June 2, 1834. — it belongs to the latter part
of the vol. 17. — and the vol. has in other
places the date of 1837.
If you feel as clear as I do that the
species = insignis, you will restore the
name P. Californiana restore

Nuttall's P. Californica. was got behind
St. Cruz. is clearly what we call tuberculata.
He merely doubtfully calls it the little-known
Californica.
P. Coulteri must of course take the precedence
of P. macrocarpa.

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